© THE QUEEN'S PRINTER FOR ONTARIO
2000

REPRODUCED WITH PERMISSION

L'IMPRIMEUR DE LA REINE POUR L'ONTARIO

REPRODUIT AVEC PERMISSION

micromedia
a division of IHS Canada

20 Victoria Street
Toronto, Ontario M5C 2N8
Tel.: (416) 362-5211
Toll Free: 1-800-387-2689
Fax: (416) 362-6161
Email: info@micromedia.on.ca

Ontario Beef Research and Services Committee

Table of Contents
Aquaculture

Broiler
Dairy
Deer
Egg Layer
Equine
Fur Bearing
Goat
Pork
Sheep
Turkey

OASCC Index |

Contents

- Executive Summary
- Emerging Issues
- Distribution of Recommendations to Agencies
- 1998 Ontario Beef Research and Services Committee Recommendations
- Two Highest Research Priorities
  - Food Safety and Meat Quality Research
  - Improved Cost Efficiencies in Cattle Production and Beef Processing
- Highest Non Research Priority - Technology Transfer
- State of the Beef and Cattle Industry
  - Inventory
  - Safety Net / Income Support
  - Grading and Packing Issues
  - Technology and Development Funds
  - Trade
  - Environment
  - Animal Rights
  - Government Restructuring
  - Industry Restructuring
- Ontario Beef Cattle Research and Services Committee Membership (1998)

EXECUTIVE SUMMARY

The Committee met on June 2, 1998. At that time, meat quality/food safety, production efficiency research and technology transfer were identified as the three top priority items. These three areas are similar to previous recommendations, however, the Committee did change the relative standing of the details under each general area accordingly to the current needs of the industry and the status of research on a given topic.

100-03341/

The Ontario and Canadian cattle industries are still facing challenges with increased price competition in the market place, especially from pork and the United States appears to be adopting a more "protectionist" attitude towards cattle and beef imports from Canada and elsewhere. North American beef production is expected to reach the cyclical highs in 1998 or early 1999.

| Table of Contents | | Top of Page |

EMERGING ISSUES

1. Antibiotic resistance – this issue is leading to more questioning of the use of antibiotics in livestock and poultry production systems.

2. Slipping demand for beef products – is a concern for all participants in the beef industry, especially with loss of value for hip and chuck cuts from the carcass.

3. Manure management - local concerns in rural areas of Ontario and throughout North America are causing all levels of government and industry groups to re-examine the regulations and management associated with the siting of livestock operations and the storage and land application of manure.

4. Food borne pathogens – are still a major public issue especially with media features about food borne pathogens such as E. coli 0157:H7, Salmonella sp. and Campylobacter.

| Table of Contents | | Top of Page |

DISTRIBUTION OF RECOMMENDATIONS TO AGENCIES

Recommendation	AAFC	ARIO	CCA	CARC	OMAFRA	Other
1. Food Safety and Meat Quality	X	X	X	X		
2. Improved Cost Efficiency	X	X	X	X		
Non Service Recommendation:						
Technology Transfer	X			X	X	

| Table of Contents | | Top of Page |

1998 ONTARIO BEEF RESEARCH AND SERVICES COMMITTEE RECOMMENDATIONS:

To: Agriculture & Agri-Food Canada, Eastern Region And To Agricultural Research Institute Of Ontario

| Table of Contents | | Top of Page |

TWO HIGHEST RESEARCH PRIORITIES

1. Food Safety and Meat Quality Research **Priority B-1**

This area continues to be a priority area for beef research with the goal of meeting or exceeding the consumer's expectations with respect to food safety and beef quality every time. Cow calf, feedlot and meat science resources at the University of Guelph (including NLARS, RCAT and KCAT) and AAFC should be focused on a "conception to consumption" integrated approach to investigate the important determinants of meat quality. Consumer concerns with food safety appear to be rising based on the frequency of media stories on microbial contamination of beef. Research should identify genetic, management, slaughter and processing factors, which contribute to a consistently high quality and safe product. This initiative is a high priority and is vital for the future competitiveness of the beef industry.

Recommended to the University of Guelph (including RCAT, NLARS and KCAT) through ARIO and AAFC stations through AAFC, CARC and CCA.

DETAILS:

i. Initiate a literature review and research study if necessary, with animal scientists and human health professionals on antibiotic resistant bacteria and potential contributions from antibiotic use in human medicine and livestock production.
ii. Initiate programs to develop new value added products from the hip and chuck areas of the beef carcasses that are convenient, safe, consistent and improve the overall value of beef.
iii. Investigate options to develop on farm systems based on HACCP principles. There is a need to establish and validate critical control points on the farm.
iv. Further study the influence of on farm management factors and intervention strategies on the presence or absence of foodborne pathogens in cattle and beef.
v. Develop and enhance vaccine and antimicrobial delivery systems to deliver effective doses to the animal while having minimal adverse effects on product quality. It has been suggested that work in this area focus on Bovine Respiratory Disease Complex (BRDC) and neonatal diseases in cattle.
vi. Support research to ensure that testing of beef products for drug residues remains effective, particularly for immune stimulator products and beta agonists.
vii. Examine options to modify the nutritional composition of beef through breeding, feeding or processing. Review and possibly study the effect of feeding genetically modified feedstuffs on beef quality and safety.
viii. Investigate the impact of low temperature roasting on the microbial integrity of the finished product. Also, investigate the use of mechanical tenderizers and its impact on the microbial integrity of the finished product.
ix. Investigate the effect of animal genetics, feeds, management and handling on beef safety and quality (marbling, portion size, tenderness, etc) and define production parameters for producers aiming for target markets (i.e. Canada Prime).

| Table of Contents | | Top of Page |

BACKGROUND:

Recent studies indicate that beef quality especially consistency is a major issue to the consumers. Beef consumption has declined since peaking in the late 1970's. An industry wide campaign (Canadian Cattlemen: Quality Starts Here) to improve the quality and safety will hopefully increase the consumer's acceptance of beef, enhancing the market share for beef and ultimately benefiting Ontario and Canadian cattlemen and processors. This recommendation benefits both the agriculture production and processing sectors in Ontario and Canada.

In general, food safety remains a key issue for the entire food industry and for the cattle and beef sector specifically. Most of the discussions are focused on microbial pathogens. Increasingly, each participant in the food system is being asked to ensure that they have taken appropriate action to ensure the safety and wholesomeness of our food and that they can prove their actions through documentation, audit and verification procedures. While quality assurance and HACCP-based systems are being developed, there remains several questions about the role of various management practices on the farm with respect to whether animals are positive or negative as carriers of various pathogenic organisms.

One of the critical areas that needs work is the hip and chuck areas of the carcass. Demand for beef cuts from these parts of the

carcass has slipped. New products that add value to these cuts while meeting consumer demands for consistency, quality and safety should enhance the overall value of beef carcasses in the market place.

Beef quality includes all the attributes and characteristics that provide the consumer with satisfactory or better experiences when eating beef. The nine priority issues raised in the study "Re-engineering the Ontario Beef Industry for Competitive Advantage" help to define the issues that must be addressed in order to achieve Total Quality Management. The nine priorities identified are as follows: recognise the diverse marketplace, improve information - consumer to producer, improve consistency, address tenderness, address portion size, address quality and taste, develop new products, improve point of sale merchandising and ensure continuous improvement. There was a recognition that as the market becomes more differentiated, each market may have different quality requirements.

| Table of Contents | | Top of Page |

2. IMPROVED COST EFFICIENCIES IN CATTLE PRODUCTION AND BEEF PROCESSING **Priority B-1**

Continued research is needed to provide new technological innovations and refinements which will improve the cost effectiveness and efficiency of Ontario beef farmers and processors.

Recommended to the University of Guelph (including RCAT, NLARS and KCAT) through ARIO and AAFC stations through AAFC, CARC and CCA.

DETAILS:

i. Research into improved and cost effective strategies for nutrient management.
ii. Examine opportunities to improve feed efficiency and utilization in beef animals and develop programs for producers that effectively convey the differences between an animal with a superior rate of feed conversion compared to an animal with a poor rate of conversion.
iii. Initiate research into "residue feeds" (i.e. corn stover) as a means to reduce feeding cost. Evaluate economic impacts, costs of fencing (permanent or temporary), effect on soil conditions next year and impact on next year's crop. In addition, consider animal production and quality aspect on the use of this feed.

iv. Genetically-engineered crops offer great potential for crop and livestock producers. As more feedstuffs are available as a result of biotechnological advances, there needs to be a review and study if necessary to ensure that feedstuffs do not adversely affect the quality or the safety of beef products.

v. Continue research related to reproductive technologies related to beef cattle production systems.
vi. Research basic and applied areas of bovine health to reduce losses associated with infectious conditions (clinical and subclinical) especially Bovine Respiratory Disease Complex (BRDC) and neonatal diseases (scours).
vii. Explore options for low cost production systems (i.e. analysis of summer calving options).
viii. Develop siting guidelines for livestock access to watercourses as well as management approaches that allow riparian areas to be used for production while minimizing environmental impacts.
ix. Develop siting guidelines for natural shelter areas (woodlots) used in the winter time. Research is needed to determine the management factors that minimize runoff and allow for adequate distribution of nutrients.
x. Examine animal welfare aspects of current production practices such as outside wintering of cattle, shade requirements in summer, alternate housing systems and issues surrounding transportation of cattle.

| Table of Contents | | Top of Page |

BACKGROUND:

Improved cost effectiveness, efficiency and competitiveness are "moving targets". In other words, continued research is needed as the industry progresses and evolves. The economic importance of being technological leaders is critical in view of the GATT agreement and liberalisation of global trade. Since issues surrounding environmental sustainability and proper animal care are placing production systems under increased public scrutiny, research needs to factor in these variables as well.

| Table of Contents | | Top of Page |

HIGHEST NON RESEARCH PRIORITY

1. Technology Transfer **Priority B-1**

These recommendations should be forwarded to the appropriate Directors and Managers in OMAFRA and AAFC.

DETAILS:

i. Explore options to maintain or enhance benchmarking services for beef producers on financial and/or herd performance. This work should be a co-operative effort with agri-business, researchers, OMAFRA extension staff, veterinarians, BIO, etc.
ii. Development and enhancement of animal and carcass identification systems to link in with the Canadian Cattlemen's Association National Identification strategy which allow for feedback and traceback of information between cattle producers, packers and processors.
iii. A "plain language" reporting and summarizing of research results is needed.
iv. Develop a presentation summarizing various beef research topics, how this research has aided cattle producers, beef processors and consumers and current topics currently under investigation.
v. The development of version one of a Canadian Beef Cattle Information Database (Beef Infobase CD) has been completed. There is need for updating by appropriate extension personnel to ensure that factsheets and other technical information are complete and current.
vi. Building deterioration is always a concern in livestock housing. New or improved materials and techniques are available to increase the life of a building. This information is available through OMAFRA engineers.

BACKGROUND:

The Committee agreed that more opportunities for interaction between researchers and technology transfer agents were still needed. There also was recognition that extension personnel face a variety of concerns and issues, some of which require leading edge research and other which require dissemination of proven technology.

| Table of Contents | | Top of Page |

EMERGING ISSUES

With current public sector fiscal cutbacks, concern was expressed that the supporting infrastructure needs to be maintained if our research programs are to continue. There needs to be a balance between funding allocated for individual projects and funding for the ongoing maintenance of the research facilities.

The meat trade, including beef is starting to become more differentiated in terms of product quality (i.e. Grade "A" beef for those consumers who rank lean as a high priority, versus those people who prefer higher levels of marbling found in Canada Grade "AAA"). Marbling, portion size, ageing, cooking instructions are components being used to differentiate products in the meat case.

Concerns with food safety are becoming more prevalent in the media and with the public. These discussions focus on issues such as antibiotic resistance, on farm HACCP systems, consumer acceptance of irradiated foods, quality assurance, medicated feeds, extra label drug use, E.coli 0157:H7, etc. Many questions remain unanswered about how farm management factors can influence the presence or absence of microbial pathogens. Part of the farm and processing sectors response to these challenges includes audit and verification procedures.

Manure management issues are also very topical. Discussions include available land base for spreading manure, siting of new livestock facilities, surface and groundwater quality issues, odour and nutrient management planning. Throughout North America, governments and livestock producers are attempting to address these issues through nutrient management planning initiatives that indicate that there is an adequate land base for the spreading of manure and that manure will be managed in an appropriate fashion. These programs are being offered as industry programs, municipal by-laws (for the siting of barns) and provincial/state regulation and legislation.

| Table of Contents | | Top of Page |

COMMITTEE ACTIVITIES

The Committee met in June 1998. The meeting was used as a priority setting forum for the Ontario Beef Research and Services Subcommittee. Several Committee members participated in a review of research co-ordination organized by Ontario Agricultural Commodity Council in early September.

| Table of Contents | | Top of Page |

STATE OF THE BEEF AND CATTLE INDUSTRY

INVENTORY

- beef cow numbers have levelled off in Ontario and Canada and since 1995.
- Ontario's share of beef cows in Canada has held relatively constant at approximately 10%
- dairy beef is a much smaller factor today than 15 years ago because of demand for dairy calves for specialized milk and grain veal production and for export and slight decline in dairy cow numbers.
- veal production is centered in Ontario and Quebec (because the dairy industry is the source of calves and source material for starter feeds)
- grain fed veal calves continue to be marketed at heavier weights in Ontario (700 – 800lbs)
- approximately 65% of Canadian cattle feeding is in Alberta
- feeding capacity expansion in Alberta has slowed to 2% growth per year
- Manitoba and Saskatchewan may see growth in cattle feeding and hog production with the termination of grain transportation subsidies (Crow rate) in 1995
- Ontario accounts for approximately 17% of Canadian fed cattle production
- cattle feeding activity in Ontario has declined over the last 15 years.
- very few corn silage finishing programs remain in Ontario because of larger framed cattle
- larger framed cattle, which make up the majority of today's supply, require high energy feeding programs for the last 90-110 days.
- backgrounding is still popular to cheapen post weaning cost of gain
- this practice has lead to continually increasing carcass weights and portion/sizes include record high carcass weights in 1997 (steers average carcass weight 765 lbs) and 1998 average weights are even higher to date.
- the increase in carcass weights is approximately equal to an additional 60,000 head of finished animals going to market per year.

| Table of Contents | | Top of Page |

SAFETY NET/INCOME SUPPORT

- Net Income Stabilization Account (NISA) is the farm income support program for non supply managed commodities.
- NISA is based on net eligible sales. Ontario producers are allowed to contribute up 2% of eligible sales which is matched by an additional 2% from federal/provincial government contributions.
- forage insurance program review continues with the hope of having a new program for the 1999 crop year.
- Federal and provincial governments are currently negotiating a new five year agreement for safety nets; key points are that the federal contribution appears to be limited to $600 million per year for new programs and programs must be trade neutral to prevent possible countervail actions by other countries.
- Ontario and Canadian Cattlemen's Associations have expressed willingness to study farm income disaster program programs. Alberta, BC and PEI have these types of programs.

| Table of Contents | | Top of Page |

GRADING AND PACKING ISSUES

- 1992 beef grade changes introduced a marbling criteria and estimation of percent lean in each carcass (grade ruler)
- retailers have started to specify AA/AAA and aging requirements in their purchasing specifications however packers continue to buy on yield groupings with no price differentiation for marbling. Cattlemen have expressed frustration over the lack of price signals for marbling specifications.
- alliances are becoming more common with packers and retailers as they attempt to differentiate their meat case from their competitors including the attempt to create a brand name awareness for their beef. Examples include the Beef Beyond Belief alliance between Better Beef and A&P/Dominion and the Original Alberta Beef program with XL Packers and Loeb.
- new technology (video image analysis) shows considerable promise in estimating saleable beef yield and further developmental research is now underway to commercialize its application. It is hoped that this technology will be available in early 1999
- commercialization of the connective tissue probe is also underway
- industry is attempting to move toward instrument grading for yield and possibly tenderness in the foreseeable future
- provincial regulations requiring beef grade labelling in advertising and at the counter for retail food service; it also requires ungraded beef to be labelled as ungraded
- a number of initiatives targeting the reduction of bacteria are underway including the requirement for federally inspected plants to have HACCP plans, the submission to Health Canada to allow the use of irradiation on ground beef, chlorine dioxide carcass washes, steam and water pasteurization for carcasses and the launch of the Canadian Partnership for Consumer Food Safety Education (with the messages COOK it, CLEAN it, CHILL it and SEPARATE it)
- industry is moving forward on national identification program for the cattle for animal health and food safety traceback. This system may allow other information related to carcass quality, genetics to flow back to producers.

| Table of Contents | | Top of Page |

TECHNOLOGY AND DEVELOPMENT FUNDS

- Opt out fund (approximately 5 million dollars from the unrefundable surplus in the National Tripartite Stabilization program) and Beef Industry Development Fund ($25 million) are nearly exhausted. Funds were targeted for enhancing beef industry technology and market development
- The safety net R&D funds (approximately $500,000) will likely be available for the Ontario beef industry in 1999 for research and development. Projects must be approved by the OCA Research Committee, Agricultural Adaptation Council and Ontario Agriculture Commodity Council
- Grow Ontario and Rural Job Strategy provide development funds in Ontario from the provincial government
- the Canadian Adaptation and Rural Development (CARD) fund has been extended by the Federal government. This program provided $28 million to the Agricultural Adaptation Council in Ontario over the last 4 years and to the federal On Farm Food Safety Program administered by the Canadian Federation of Agriculture
- these programs often require matching private sector contributions, partnerships between organizations and often include components to enhance food safety/quality, rural development/job creation and export opportunities.

| Table of Contents | | Top of Page |

TRADE

- over the last 15 years, Canada has developed a major export trade basis with the United States
- approximately 54% of gross cattle and beef production is exported to the U.S. (net balance of 37% when imports from the U.S. are accounted for)
- this change in trade status with the U.S. has made Canadian cattlemen very apprehensive about price and income support programs because of potential countervail action from the U.S.
- U.S. cattlemen are becoming more protectionist as the US Senate debated (and rejected) an initiative that would have required country of origin labelling on beef and lamb in the US. In addition, a group of U.S. cattlemen are attempting to have anti-dumping/countervailing duties brought against Canadian beef and cattle imports to the US
- financial problems in the Pacific Rim countries have resulted in a backlog of pork and beef in North America illustrating the importance of offshore exports to long term growth for the red meat sector.

| Table of Contents | | Top of Page |

ENVIRONMENT

- manure handling/water quality issues continue to be a major challenge for livestock production as municipal, provincial and federal governments grapple with this issue.
- industry and government initiatives are moving towards nutrient management plans which requires livestock producers to document that they have an adequate landbase to spread manure
- ongoing verification or audit provisions are still being discussed with manure management issues
- cattlemen and other farmers are concerned with increasing losses from wildlife such as coyotes, deer, racoons, Canada geese, etc.
- some government programs which provide financial incentives or support to intensive cropping are negative to forage and grazing livestock
- wildlife/wetlands/forestry preservation is still an issue along with related land use designations and zoning
- cattlemen have worked jointly with other organizations (Ducks Unlimited, Ontario Federation of Anglers and Hunters) to demonstrate successful co-existence of cattle, wildlife and wetlands, yet maintain water quality.
- private property rights is still a hot issue especially with potential federal endangered species legislation

| Table of Contents | | Top of Page |

ANIMAL RIGHTS

- movement is well established and funded
- cattle handling/transportation is being targeted
- an increased amount of vandalism has been attributed to the movement in the last year

| Table of Contents | | Top of Page |

GOVERNMENT RESTRUCTURING

- fiscal restraint has lead to declining public support for research extension, inspection, production and income support programs.
  costs of some programs have been downloaded to users
- industry is asking for greater input into policy and operation details if it is to bear the cost
- agriculture groups are becoming more vocal in demanding that the federal and provincial governments need to be increasing their investment and commitment to agriculture and food

| Table of Contents | | Top of Page |

INDUSTRY RESTRUCTURING

- trend continues towards greater concentration in packing and cattle feeding
- retail competition remains fierce
- all sectors of the industry have been driven by very narrow margins and competitive pressures to survive in the short run with very little long run planning
- there is increasing recognition that cattlemen and processors must become more consumer focused in breeding, production and merchandising programs if they are to maintain or enhance beef's share of the consumer meat dollar.
- a major complaint from the retail and food service sectors is that cut size/portion cost from today's larger framed cattle are too big and impairing consumer demand (particularly middle cuts - today the 6 oz steak is the biggest seller in Canada)
- an increasing proportion of beef consumption is in ground form for which imported boneless beef from offshore is a major competitor.

| Table of Contents | | Top of Page |

ONTARIO BEEF CATTLE RESEARCH AND SERVICES SUBCOMMITTEE MEMBERSHIP (1998)

Six representatives appointed from industry, service and research sectors.
Chairman: Peter Doris, Ontario Cattlemen's Association

Dr. Rick Healey, D.V.M. Ont. Assoc. of Bovine Prac. Paris Veterinary Clinic 321 Grand River St. N Box 21120 Paris, Ontario, N3K 4A5 Tel: 519 442 2522 Fax: 519 442 7558 tenure -1998	Peter Doris, OCA 130 Malcolm Road Guelph, Ontario N1K 1B1 Tel: 519-824-0334 Fax: 824-9101 tenure - 1998
Ralph Macartney OMAFRA P.O. Box 1030 Guelph, Ontario N1H 6N1 Tel:519-826 3291 tenure - 1999	Dr. Bob Hayes, DVM Better Beef 781 York Rd. E. Guelph, Ontario N1E 6N1 Tel: 519-823-5200 Fax: 519-823-5451 tenure - 1998
Harold House, Engineer OMAFRA Box 159, 20 King Street Clinton, Ontario N0M 1L0 Tel: 519-482-3428 Fax: 519-482-5031 tenure - 1999	Dr. Jock Buchanan-Smith Dept. of Animal & Poul. Sci. University of Guelph Guelph, Ontario N1G 2W1 Tel: 519-824-4120 Fax: 836 9873 tenure - 1999
Dave Proulx Can. Meat Council 49 Armadale Ave. Toronto, Ont. M6S 3W9 Tel: 416 769 0465 Fax: 769 1006 tenure - 1998	Dr. Pat Shewen Dept. Vet. Microbiology & Immunology University of Guelph Guelph, Ontario N1G 2W1 Tel: 519-824-4120 Fax: 767 0809 tenure - 1998

Dr. Lois Valli, DVM Can. Animal Health Inst. c/o Ayerst 400 Michener Road Guelph, Ontario tenure -1998	Tom Hamilton, NLARS OMAFRA, Box G New Liskeard, Ontario P0J 1P0 Tel: 705-647-6701 Fax: 705-647-7993 tenure - 1999
Dr. Andy Robinson, BIO R.R. # 7 Guelph, Ontario, N1H 6J4 Tel: 519-767-2665 Fax: 767 2502 tenure - 1999	Phil McEwen Ridgetown College of Agricultural Technology Ridgetown, Ontario N0P 2C0 Tel: 519 674 5456 Fax: 674 1555 tenure - 1999
Harvey Brown Ontario Cattlemen's Assoc., 5664 Elgin Mills Road East Markham, Ontario L3P 3J3 905 640 1117 (phone & fax) tenure - 1998	Dr. Donna Hutchings Animal Diseases Res. Institute 3851 Fallowfield Rd. Nepean, Ontario K2H 8P9 Tel: 613-998-9320 ext. 5942 Fax: 613-954-5876 tenure - 2000
Arden Schneckenburger Ontario Cattlemen's Assoc., R.R.#1 Morrisburg, Ontario K0E 1X0 Tel: 613 543 2312 Fax: 543 3977 tenure - 2000	Dr. Gabriel Roy, AAFC Kapuskasing Exp. Farm P.O. Box 160. Kapuskasing, Ontario P5N 2Y3 Tel: 705 335-6148 Fax: 337 6000 tenure - 1999
Mike Cooper Ontario Veal Assoc. c/o Grober Inc. 162 Savage Drive Cambridge, Ontario N1R 7G7 Tel: 519-622-2500 Fax: 519-623-8120 tenure - 1998	Dr. Dan Ganesh, PhD Ontario Grain & Feed Assoc. c/o GROWMARK Inc P.O. Box 527 Mississauga, Ontario L5A 3A4 Tel: 905 890 8500 tenure - 1999

| Table of Contents || Top of Page |

| Education, Research & Laboratories Home Page |

| Central Site | Feedback | Search | Site Map | Français |
| Home | What's New | Calendar | Products | News Releases |

Ontario
This page maintained by the Government of Ontario

This information is provided as a public service, but we cannot guarantee that the information is current or accurate. Readers should verify the information before acting on it.

Feedback and technical inquiries to: research@omafra.gov.on.ca
©Copyright 2000 Queen's Printer for Ontario